

Fig. 1C

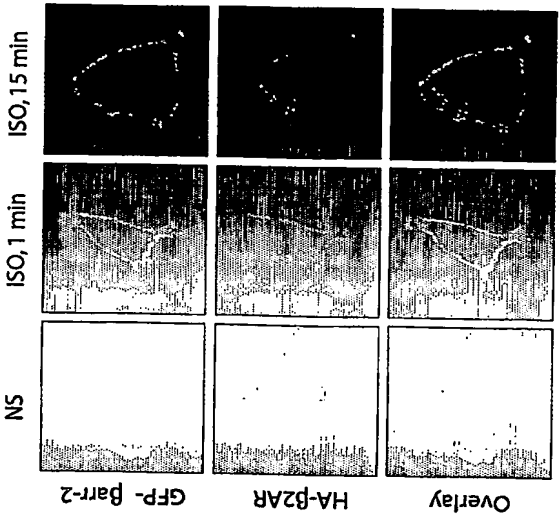


Fig. 1D

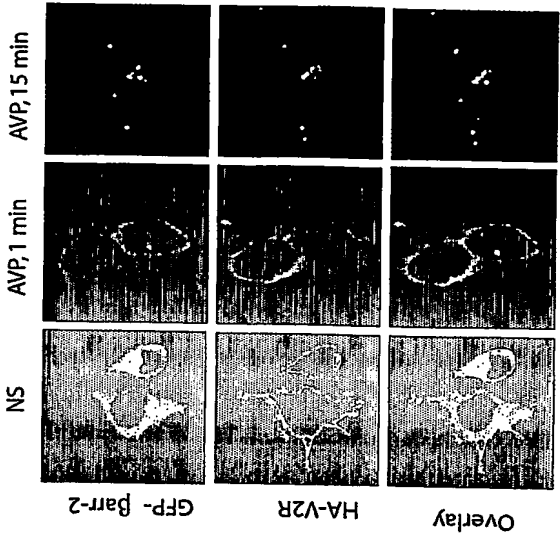


Fig. 2A

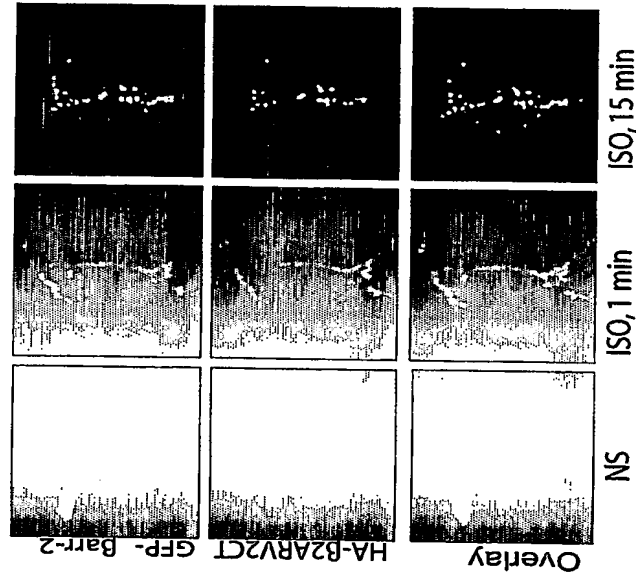


Fig. 2B

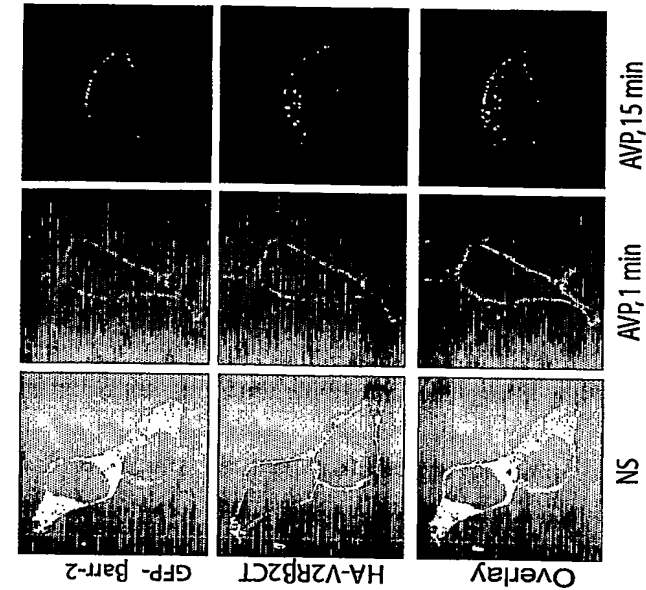


Fig. 2C

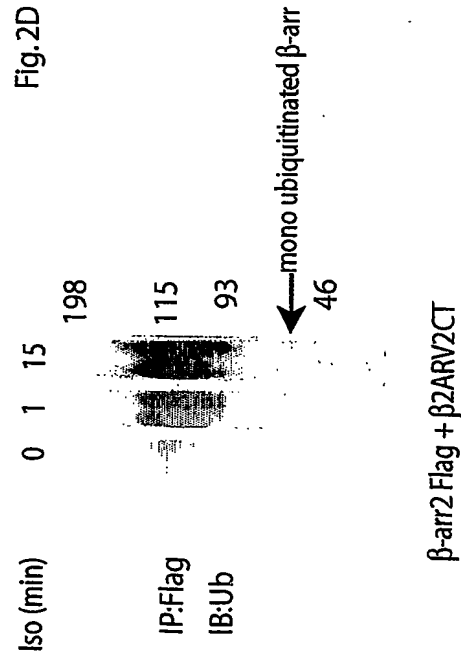


Fig. 2D

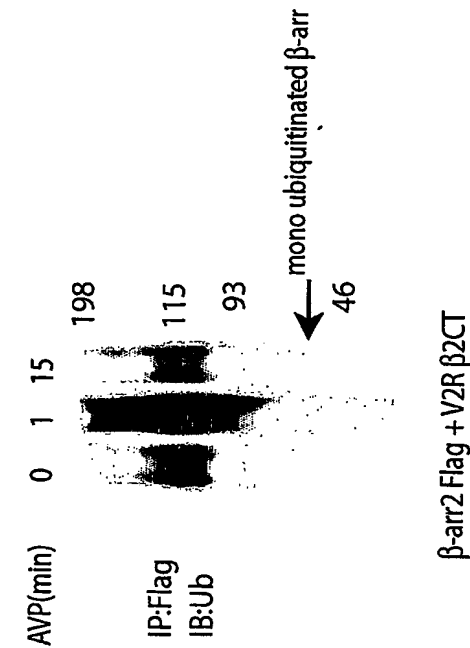


Fig. 3A

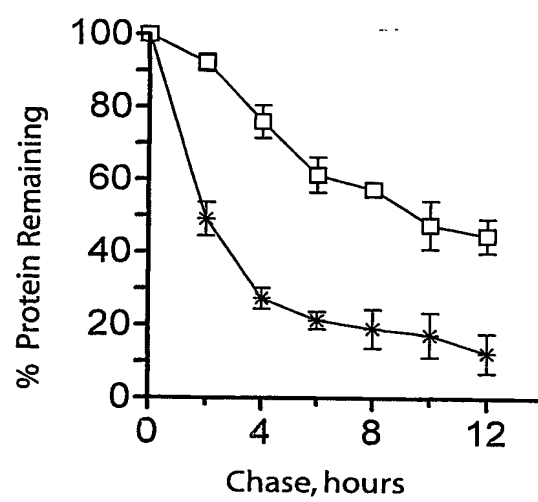
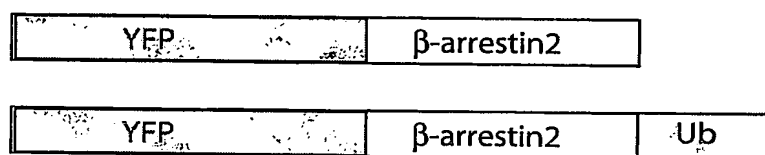


Fig 3B

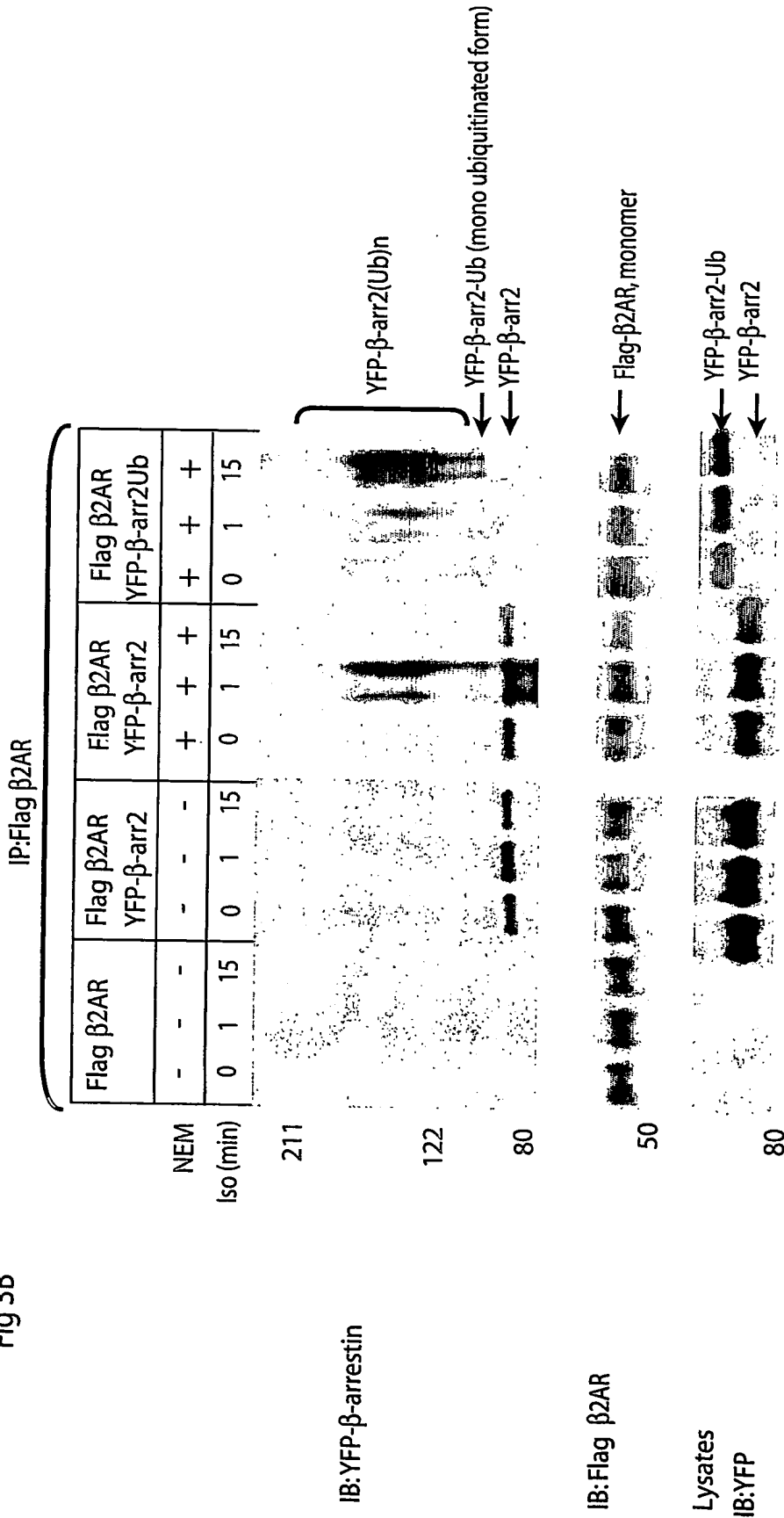


Fig. 4A

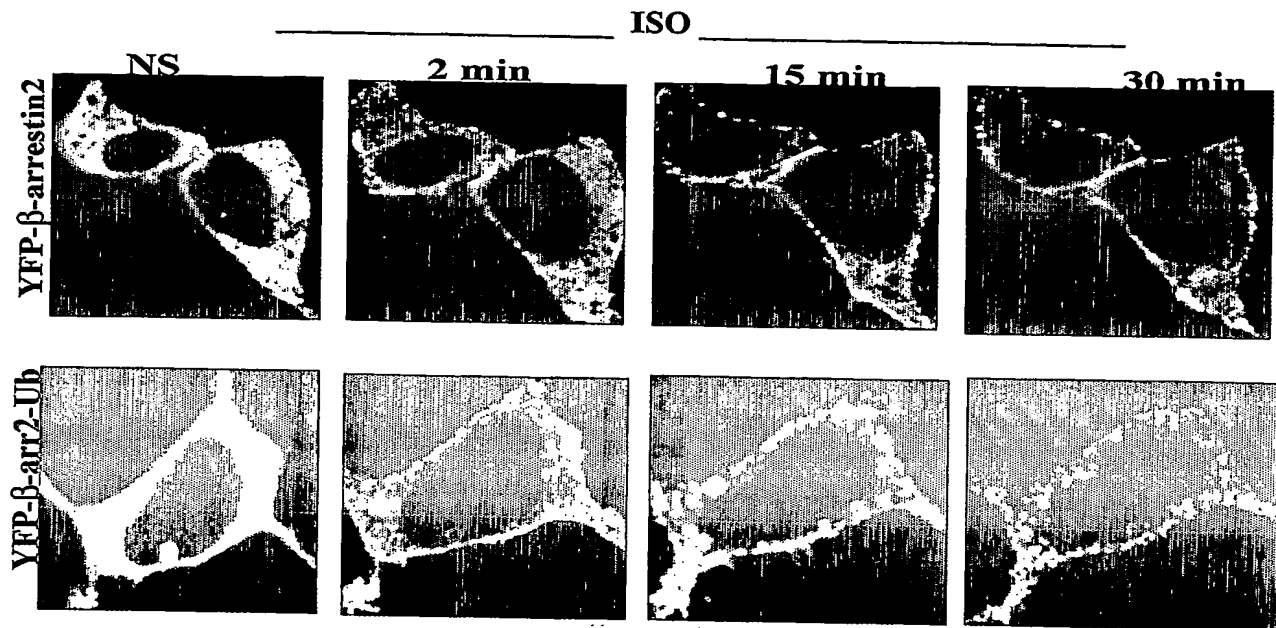


Fig. 4B

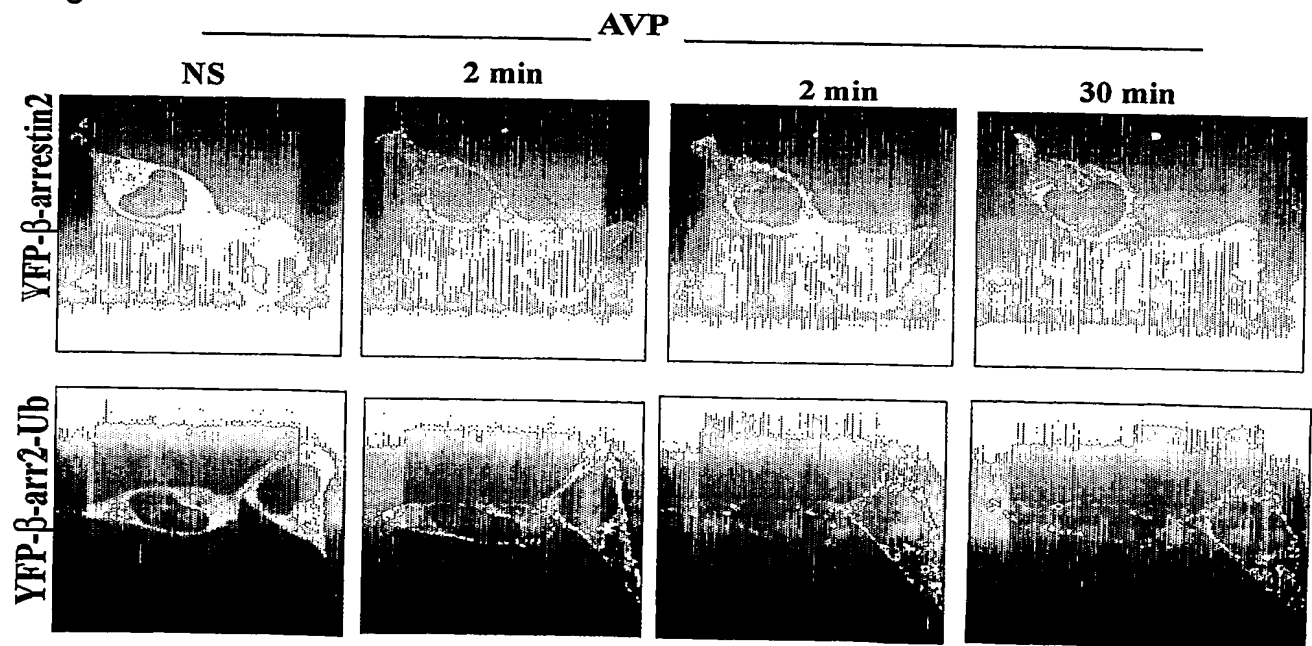


Fig 5A

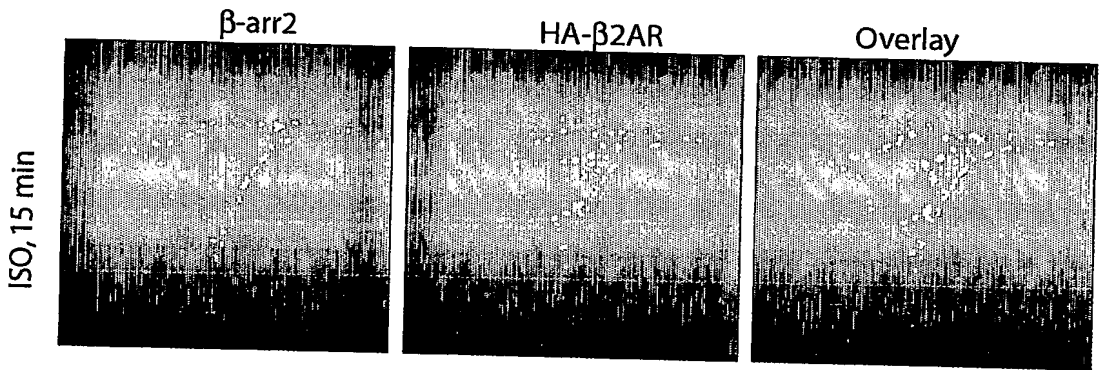


Fig 5B

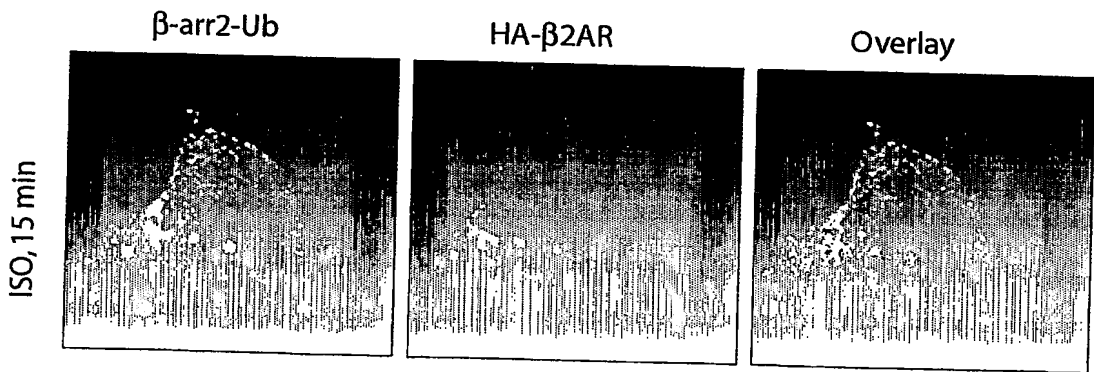


Fig. 6A

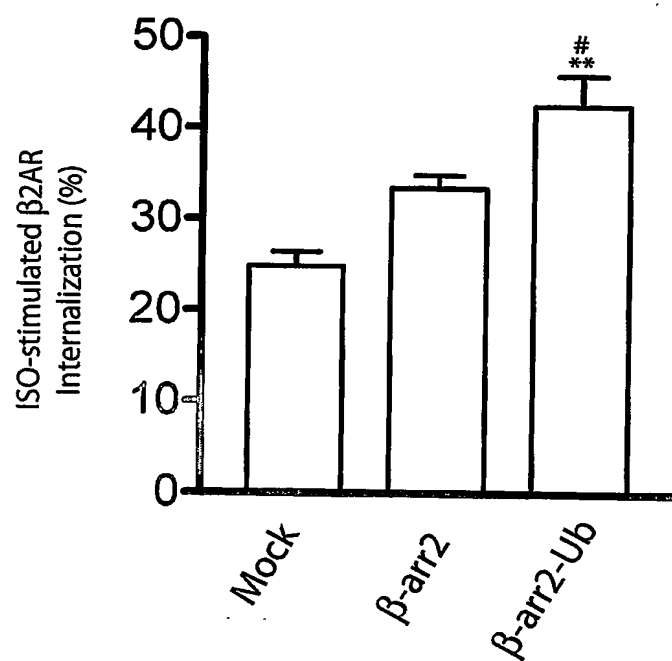


Fig. 6B

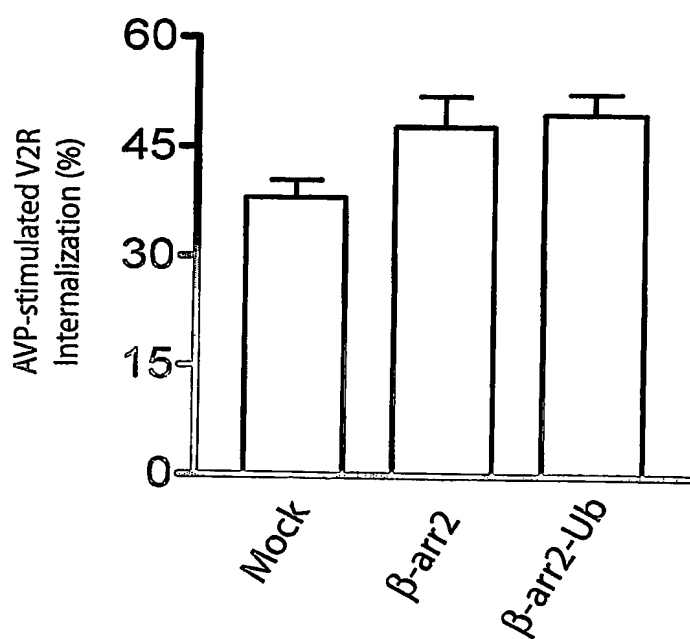


Fig. 7A

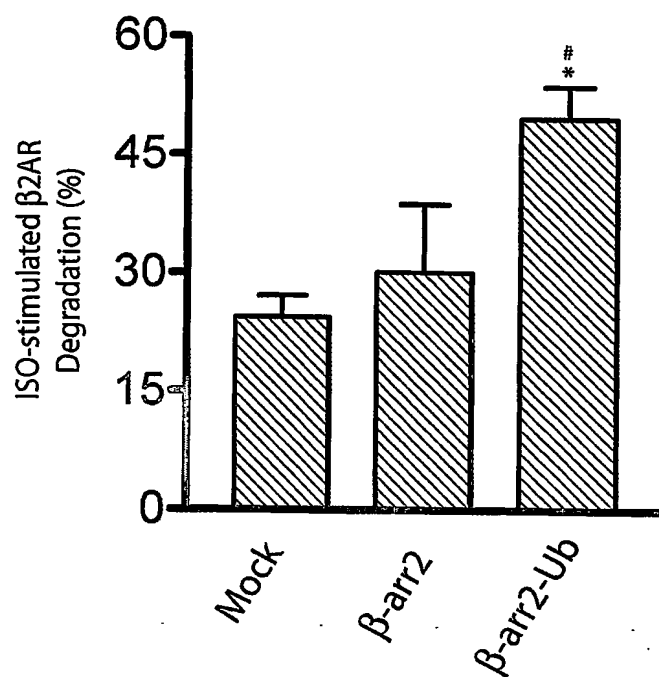


Fig. 7B

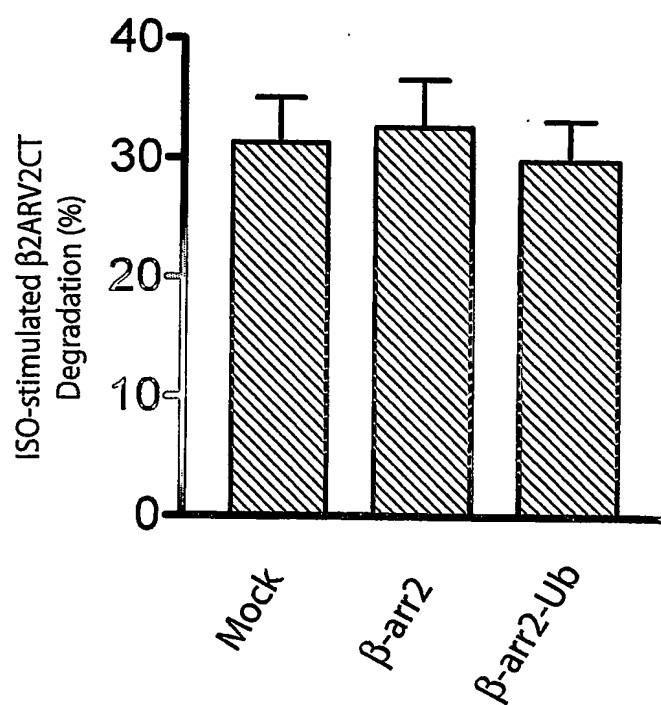


Fig. 8

EYFP-BARR2-Ub

661/221	691/231
CTG CTG GAG TTC GTG ACC GCC GCC GGG	ATC ACT CTC GGC ATG GAC GAG CTG TAC AAG TCC
L L E F V T A A G	I T L G M D E L Y K S
721/241	751/251
GGA CTC AGA TCT CGA GCT CAA GCT TCG	AAT TCT GCA GTC GAC GGT ACC ACG CGC ACC
G L R S R A Q A S	K S A V D G T T R T
1/1	31/11
ATG GGT GAA AAA CCC GGG ACC AGG GTC	TTC AAG AAG TCG AGC CCT AAC TGC AAG CTC ACC
M G E K P G T R V	F K K S S P N C K L T
61/21	91/31
GTG TAC TTG GGC AAG CGT GAC TTT GTG	GAT CAC TTG GAC AAA GTG GAT CCT GTC GAT GGT
V Y L G K R D F V	D H L D K V D P V D G
121/41	151/51
GTG GTG CTT GTG GAT CCT GAC TAC TTG	AAG GAC CGG AAA GTG TTT GTG ACC CTC ACC TGT
V V L V D P D Y L	K D R K V F V T L T C
181/61	211/71
GCC TTC CGC TAT GGC CGA GAA GAC CTG	GAT GTA CTG GGC CTG TCT TTC CGC AAA GAT CTG
A F R Y G R E D L	D V L G L S F R K D L
241/81	271/91
TTC ATC GCC ACC TAC CAG GCC TTC CCC	CCC ATG CCC AAC CCA CCT CGG CCC CCC ACC CGC
F I A T Y Q A F P	P M P N P P R P P T R
301/101	331/111
CTA CAG GAC CGA CTG CTG AAG AAG TTG	GGC CAG CAT GCC CAC CCC TTT TTT TTC ACA ATA
L Q D R L L K K L	G Q H A H P F F F T I
361/121	391/131
CCC CAG AAT TTG CCT TGC TCC GTC ACA	CTG CAG CCA GGA CCG GAG GAC ACA GGG AAG GCC
P Q N L P C S V T	L Q P G P E D T G K A
421/141	451/151
TGT GGA GTA GAC TTT GAG ATT CGA GCC	TTC TGT GCC AAA TCT ATA GAA GAA AAA AGC CAC
C G V D F E I R A	F C A K S I E E K S H
481/161	511/171
AAA AGG AAC TCC GTG CGG CTT ATC ATC	AGA AAG GTA CAG TTT GCT CCT GAG ACA CCC GGC
K R N S V R L I I	R K V Q F A P E T P G
541/181	571/191
CCC CAG CCA TCA GCT GAA ACC ACA CGC	CAC TTC CTC ATG TCT GAC CGG AGG TCC CTG CAC
P Q P S A E T T R	H F L M S D R R S L H
601/201	631/211
CTA GAG GCT TCC CTG GAC AAA GAG CTG	TAC TAC CAT GGG GAA CCC CTC AAT GTC AAC GTC
L E A S L D K E L	Y Y H G E P L N V N V
661/221	691/231
CAC GTC ACC AAC AAT TCT GCC AAG ACC	GTC AAG AAG ATC AGA GTG TCT GTG AGA CAG TAT
H V T N N S A K T	V K K I R V S V R Q Y
721/241	751/251
GCC GAC ATT TGC CTC TTC AGC ACC GCG	CAG TAC AAG TGT CCT GTG GCT CAG CTT GAA CAA
A D I C L F S T A	Q Y K C P V A Q L E Q
781/261	811/271
GAT GAC CAG GTG TCT CCC AGT TCC ACA	TTC TGC AAG GTG TAC ACC ATA ACC CCG CTG CTC
D D Q V S P S S T	F C K V Y T I T P L L
841/281	871/291
AGT GAC AAC CGA GAG AAG CGT GGC CTT	GCC CTT GAT GGG CAA CTC AAG CAC GAA GAC ACC
S D N R E K R G L	A L D G Q L K H E D T
901/301	931/311
AAC CTG GCT TCC AGC ACC ATT GTG AAG	GAG GGA GCC AAC AAG GAG GTG CTG GGA ATC CTA
N L A S S T I V K	E G A N K E V L G I L
961/321	991/331
GTA TCC TAC AGG GTC AAG GTG AAG CTG	GTG GTG TCT CGA GGC GGG GAT GTC TCC GTG GAG
V S Y R V K V K L	V V S R G G D V S V E
1021/341	1051/351
CTA CCT TTC GTC CTA ATG CAC CCC AAG	CCC CAC GAC CAC ATC ACC CTT CCC CGA CCC CAG
L P F V L M H P K	P H D H I T L P R P Q
1081/361	1111/371
TCA GCC CCC CGG GAA ATA GAC ATC CCT	GTG GAT ACC AAC CTC ATT GAA TTC GAT ACC AAC
S A P R E I D I P	V D T N L I E F D T N
1141/381	1171/391
TAT GCC ACA GAC GAC GAC ATC GTG TTT	GAG GAC TTT GCG AGG CTT CGG CTG AAG GGG ATG
Y A T D D D I V F	E D F A R L R L K G M
1201/401	1231/410

AAG GAT GAC GAC TGT GAT GAC CAG TTC TGC GTC GAC CAG ATC TTC GTG AAG ACT CTG
K D D D C D D Q F C V D Q I F V K T L
22/8 52/18
ACT GGT AAG ACC ATC ACC CTC GAG GTG GAG CCC AGT GAC ACC ATC GAG AAT GTC AAG GCA
T G K T I T L E V E P S D T I E N V K A
82/28 112/38
AAG ATC CAA GAT AAG GAA GGC ATT CCT CCT GAT CAG CAG AGG TTG ATC TTT GCC GGA AAA
K I Q D K E G I P P D Q Q R L I F A G K
142/48 172/58
CAG CTG GAA GAT GGT CGT ACC CTG TCT GAC TAC AAC ATC CAG AAA GAG TCC ACC TTG CAC
Q L E D G R T L S D Y N I Q K E S T L H
202/68
CTG GTA CTC CGT CTC AGA GGT GGG TGA
L V L R L R G G ***

Fig. 9

EYFP-BARR2-Ub48

661/221 691/231
CTG CTG GAG TTC GTG ACC GCC GCC GGG ATC ACT CTC GGC ATG GAC GAG CTG TAC AAG TCC
L L E F V T A A G I T L G M D E L Y K S

721/241 751/251
GGA CTC AGA TCT CGA GCT CAA GCT TCG AAT TCT GCA GTC GAC GGT ACC ACG CGC ACC
G L R S R A Q A S K S A V D G T T R T

1/1 31/11
ATG GGT GAA AAA CCC GGG ACC AGG GTC TTC AAG AAG TCG AGC CCT AAC TGC AAG CTC ACC
M G E K P G T R V F K K S S P N C K L T

61/21 91/31
GTG TAC TTG GGC AAG CGT GAC TTT GTG GAT CAC TTG GAC AAA GTG GAT CCT GTC GAT GGT
V Y L G K R D F V D H L D K V D P V D G

121/41 151/51
GTG GTG CTT GTG GAT CCT GAC TAC TTG AAG GAC CGG AAA GTG TTT GTG ACC CTC ACC TGT
V V L V D P D Y L K D R K V F V T L T C

181/61 211/71
GCC TTC CGC TAT GGC CGA GAA GAC CTG GAT GTA CTG GGC CTG TCT TTC CGC AAA GAT CTG
A F R Y G R E D L D V L G L S F R K D L

241/81 271/91
TTC ATC GCC ACC TAC CAG GCC TTC CCC CCC ATG CCC AAC CCA CCT CGG CCC CCC ACC CGC
F I A T Y Q A F P P M P N P P R P P T R

301/101 331/111
CTA CAG GAC CGA CTG CTG AAG AAG TTG GGC CAG CAT GCC CAC CCC TTT TTT TTC ACA ATA
L Q D R L L K K L G Q H A H P F F F T I

361/121 391/131
CCC CAG AAT TTG CCT TGC TCC GTC ACA CTG CAG CCA GGA CCG GAG GAC ACA GGG AAG GCC
P Q N L P C S V T L Q P G P E D T G K A

421/141 451/151
TGT GGA GTA GAC TTT GAG ATT CGA GCC TTC TGT GCC AAA TCT ATA GAA GAA AAA AGC CAC
C G V D F E I R A F C A K S I E E K S H

481/161 511/171
AAA AGG AAC TCC GTG CGG CTT ATC ATC AGA AAG GTA CAG TTT GCT CCT GAG ACA CCC GGC
K R N S V R L I I R K V Q F A P E T P G

541/181 571/191
CCC CAG CCA TCA GCT GAA ACC ACA CGC CAC TTC CTC ATG TCT GAC CGG AGG TCC CTG CAC
P Q P S A E T T R H F L M S D R R S L H

601/201 631/211
CTA GAG GCT TCC CTG GAC AAA GAG CTG TAC TAC CAT GGG GAA CCC CTC AAT GTC AAC GTC
L E A S L D K E L Y Y H G E P L N V N V

661/221 691/231
CAC GTC ACC AAC AAT TCT GCC AAG ACC GTC AAG AAG ATC AGA GTG TCT GTG AGA CAG TAT
H V T N N S A K T V K K I R V S V R Q Y

721/241 751/251
GCC GAC ATT TGC CTC TTC AGC ACC GCG CAG TAC AAG TGT CCT GTG GCT CAG CTT GAA CAA
A D I C L F S T A Q Y K C P V A Q L E Q

781/261 811/271
GAT GAC CAG GTG TCT CCC AGT TCC ACA TTC TGC AAG GTG TAC ACC ATA ACC CCG CTG CTC
D D Q V S P S S T F C K V Y T I T P L L

841/281 871/291
AGT GAC AAC CGA GAG AAG CGT GGC CTT GCC CTT GAT GGG CAA CTC AAG CAC GAA GAC ACC
S D N R E K R G L A L D G Q L K H E D T

901/301 931/311
AAC CTG GCT TCC AGC ACC ATT GTG AAG GAG GGA GCC AAC AAG GAG GTG CTG GGA ATC CTA
N L A S S T I V K E G A N K E V L G I L

961/321 991/331
GTA TCC TAC AGG GTC AAG GTG AAG CTG GTG GTG TCT CGA GGC GGG GAT GTC TCC GTG GAG
V S Y R V K V K L V V S R G G D V S V E

1021/341 1051/351
CTA CCT TTC GTC CTA ATG CAC CCC AAG CCC CAC GAC CAC ATC ACC CTT CCC CGA CCC CAG
L P F V L M H P K P H D H I T L P R P Q

1081/361 1111/371
TCA GCC CCC CGG GAA ATA GAC ATC CCT GTG GAT ACC AAC CTC ATT GAA TTC GAT ACC AAC
S A P R E I D I P V D T N L I E F D T N

1141/381 1171/391
TAT GCC ACA GAC GAC GAC ATC GTG TTT GAG GAC TTT GCG AGG CTT CGG CTG AAG GGG ATG
Y A T D D D I V F E D F A R L R L K G M

1201/401 1231/410

AAG GAT GAC GAC TGT GAT GAC CAG TTC TGC GTC GAC CAG ATT TTC GTC AAG ACT TTG
K D D D C D D Q F C V D Q I F V K T L
22/8 52/18
ACC GGT AAA ACC ATA ACA TTG GAA GTT GAA TCT TCC GAT ACC ATC GAC AAC GTT AAG TCG
T G K T I T L E V E S S D T I E N V K S
82/28 112/38
AAA ATT CAA GAC AAG GAA GGT ATC CCT CCA GAT CAA CAA AGA TTG ATC TTT GCC GGT AGG
K I Q D K E G I P P D Q Q R L I F A G R
142/48 172/58
CAG CTA GAA GAC GGT AGA ACG CTG TCT GAT TAC AAC ATT CAG AAG GAG TCC ACC TTA CAT
Q L E D G R T L S D Y N I Q K E S T L H
202/68
CTT GTG CTA AGG CTA AGA GGT GGT TGA
L V L R L R G G ***

Fig. 10

EGFP-BARR2-Ub48

661/221
 CTG CTG GAG TTC GTG ACC GCC GCC GGG ATC ACT CTC GGC ATG GAC GAG CTG TAC AAG TCC
 L L E F V T A A G I T L G M D E L Y K S
 721/241
 GGA CTC AGA TCT CGA GCT CAA GCT TCG AAT TCT GCA GTC GAC GGT ACC ACG CGC ACC
 G L R S R A Q A S K S A V D G T T R T
 1/1
 ATG GGT GAA AAA CCC GGG ACC AGG GTC TTC AAG AAG TCG AGC CCT AAC TGC AAG CTC ACC
 M G E K P G T R V F K K S S P N C K L T
 61/21
 GTG TAC TTG GGC AAG CGT GAC TTT GTG GAT CAC TTG GAC AAA GTG GAT CCT GTC GAT GGT
 V Y L G K R D F V D H L D K V D P V D G
 121/41
 GTG GTG CTT GTG GAT CCT GAC TAC TTG AAG GAC CGG AAA GTG TTT GTG ACC CTC ACC TGT
 V V L V D P D Y L K D R K V F V T L T C
 181/61
 GCC TTC CGC TAT GGC CGA GAA GAC CTG GAT GTA CTG GGC CTG TCT TTC CGC AAA GAT CTG
 A F R Y G R E D L D V L G L S F R K D L
 241/81
 TTC ATC GCC ACC TAC CAG GCC TTC CCC CCC ATG CCC AAC CCA CCT CGG CCC CCC ACC CGC
 F I A T Y Q A F P P M P N P P R P P T R
 301/101
 CTA CAG GAC CGA CTG CTG AAG AAG TTG GGC CAG CAT GCC CAC CCC TTT TTT TTC ACA ATA
 L Q D R L L K K L G Q H A H P F F F T I
 361/121
 CCC CAG AAT TTG CCT TGC TCC GTC ACA CTG CAG CCA GGA CCG GAG GAC ACA GGG AAG GCC
 P Q N L P C S V T L Q P G P E D T G K A
 421/141
 TGT GGA GTA GAC TTT GAG ATT CGA GCC TTC TGT GCC AAA TCT ATA GAA GAA AAA AGC CAC
 C G V D F E I R A F C A K S I E E K S H
 481/161
 AAA AGG AAC TCC GTG CGG CTT ATC ATC AGA AAG GTA CAG TTT GCT CCT GAG ACA CCC GGC
 K R N S V R L I I R K V Q F A P E T P G
 541/181
 CCC CAG CCA TCA GCT GAA ACC ACA CGC CAC TTC CTC ATG TCT GAC CGG AGG TCC CTG CAC
 P Q P S A E T T R H F L M S D R R S L H
 601/201
 CTA GAG GCT TCC CTG GAC AAA GAG CTG TAC TAC CAT GGG GAA CCC CTC AAT GTC AAC GTC
 L E A S L D K E L Y Y H G E P L N V N V
 661/221
 CAC GTC ACC AAC AAT TCT GCC AAG ACC GTC AAG AAG ATC AGA GTG TCT GTG AGA CAG TAT
 H V T N N S A K T V K K I R V S V R Q Y
 721/241
 GCC GAC ATT TGC CTC TTC AGC ACC GCG CAG TAC AAG TGT CCT GTG GCT CAG CTT GAA CAA
 A D I C L F S T A Q Y K C P V A Q L E Q
 781/261
 GAT GAC CAG GTG TCT CCC AGT TCC ACA TTC TGC AAG GTG TAC ACC ATA ACC CCG CTG CTC
 D D Q V S P S S T F C K V Y T I T P L L
 841/281
 AGT GAC AAC CGA GAG AAG CGT GGC CTT GCC CTT GAT GGG CAA CTC AAG CAC GAA GAC ACC
 S D N R E K R G L A L D G Q L K H E D T
 901/301
 AAC CTG GCT TCC AGC ACC ATT GTG AAG GAG GGA GCC AAC AAG GAG GTG CTG GGA ATC CTA
 N L A S S T I V K E G A N K E V L G I L
 961/321
 GTA TCC TAC AGG GTC AAG GTG AAG CTG GTG GTG TCT CGA GGC GGG GAT GTC TCC GTG GAG
 V S Y R V K V K L V V S R G G D V S V E
 1021/341
 CTA CCT TTC GTC CTA ATG CAC CCC AAG CCC CAC GAC CAC ATC ACC CTT CCC CGA CCC CAG
 L P F V L M H P K P H D H I T L P R P Q
 1081/361
 TCA GCC CCC CGG GAA ATA GAC ATC CCT GTG GAT ACC AAC CTC ATT GAA TTC GAT ACC AAC
 S A P R E I D I P V D T N L I' E F D T N
 1141/381
 TAT GCC ACA GAC GAC GAC ATC GTG TTT GAG GAC TTT GCG AGG CTT CGG CTG AAG GGG ATG
 Y A T D D D I V F E D F A R L R L K G M
 1201/401
 1231/410

AAG GAT GAC GAC TGT GAT GAC CAG TTC TGC GTC GAC CAG ATC TTC GTG AAG ACT CTG
K D D D C D D Q F C V D Q I F V K T L
22/8 52/18
ACT GGT AAG ACC ATC ACC CTC GAG GTG GAG CCC AGT GAC ACC ATC GAG AAT GTC AAG GCA
T G K T I T L E V E P S D T I E N V K A
82/28 112/38
AAG ATC CAA GAT AAG GAA GGC ATT CCT CCT GAT CAG CAG AGG TTG ATC TTT GCC GGA AGA
K I Q D K E G I P P D Q Q R L I F A G R
142/48 172/58
CAG CTG GAA GAT GGT CGT ACC CTG TCT GAC TAC AAC ATC CAG AAA GAG TCC ACC TTG CAC
Q L E D G R T L S D Y N I Q K E S T L H
202/68
CTG GTA CTC CGT CTC AGA GGT GGG TGA
L V L R L R G G ***

Fig. 11A Human G Protein Coupled Receptor Family
(Receptors known as of January, 1999)

CLASS	LIGAND	NUMBER	TISSUE	PHYSIOLOGY	THERAPEUTICS
•Class I Rhodopsin like	•Amine				
	•Acetylcholine (muscarinic & nicotinic)	5	Brain, Nerves, Heart	Neurotransmitter	Acuity, Alzheimer's
	•Adrenoceptors				
	•Alpha Adrenoceptors	6	Brain, Kidney, Lung	Gluconeogenesis	Diabetes, Cardiovascular
	•Beta Adrenoceptors	3	Kidney, Heart	Muscle Contraction	Cardiovascular, Respiratory
	•Dopamine	5	Brain, Kidney, GI	Neurotransmitter	Cardiovascular, Parkinson's
	•Histamine	2	Vascular, Heart, Brain	Vascular Permeability	Anti-inflammatory, Ulcers
	•Serotonin (5-HT)	16	Most Tissues	Neurotransmitter	Depression, Insomnia, Analgesic
	•Peptide				
	•Angiotensin	2	Vascular, Liver, Kidney	Vasoconstriction	Cardiovascular, Endocrine
	•Bradykinin	1	Liver, Blood	Vasodilation,	Anti-inflammatory, Asthma
	•C5a anaphylatoxin	1	Blood	Immune System	Anti-inflammatory
	•Fmet-leu-phe	3	Blood	Chemoattractant	Anti-inflammatory
	•Interleukin-8	1	Blood	Chemoattractant	Anti-inflammatory
	•Chemokine	6	Blood	Chemoattractant	Anti-inflammatory
	•Orexin	2	Brain	Fat Metabolism	Obesity
	•Nociceptin	1	Brain	Bronchodilator, Pain	Airway Diseases, Anesthetic
	•CCK (Gastrin)	2	Gastrointestinal	Motility, Fat Absorption	Gastrointestinal, Obesity, Parkinson's
	•Endothelin	2	Heart, Bronchus, Brain	Muscle Contraction	Cardiovascular, Respiratory
	•Melanocortin	5	Kidney, Brain	Metabolic Regulation	Anti-inflammatory, Analgesics
	•Neuropeptide Y	5	Nerves, Intestine, Blood	Neurotransmitter	Behavior, Memory, Cardio-vascular
	•Neurotensin	1	Brain,	CNS	Cardiovascular, Analgesic

·Opioid	3	Brain,	CNS	Depression, Analgesic
·Somatostatin	5	Brain, Gastrointestinal	Neurotransmitter	Oncology, Alzheimer's
·Tachykinin				
·Thrombin	3	Brain Nerves	Neurohormone	Depression, Analgesic
(Substance P, NKA ₁)	3	Platelets, Blood Vessels	Coagulation	Anti-coagulant, Anti-inflammatory
·Vasopressin-like	4	Arteries, Heart, Bladder	Water Balance	Anti-diuretic, Diabetic Complications
·Galanin	1	Brain, Pancreas	Neurotransmitter	Analgesics, Alzheimer's
·Hormone protein				
·Follicle stimulating hormone	1	Ovary, Testis	Endocrine	Infertility
·Lutropin-choriogonadotropic	1	Ovary, Testis	Endocrine	Infertility
·Thyrotropin	1	Thyroid	Endocrine	Thyroidism, Metabolism
·(Rhod)opsin				
·Opsin	5	Eye	Photoreception	Ophthalmic Diseases
·Olfactory	4(~1000)	Nose	Smell	Olfactory Diseases
·Prostanoid				
·Prostaglandin	5	Arterial, Gastrointestinal	Vasodilation, Pain	Cardiovascular, Analgesic
·Lysophosphatidic Acid	2	Vessels, Heart, Lung	Inflammation	Cancer, Anti-Inflammatory
·Sphingosine-1-phosphate	2	Most Cells	Cell proliferation	Cancer
·Leukotriene	1	White Blood Cells, Bronchus	Inflammation	Asthma, Rheumatoid Arthritis
·Prostacyclin	1	Arterial, Gastrointestinal	Platelet Regulation	Cardiovascular
·Thromboxane	1	Arterial, Bronchus	Vasoconstriction	Cardiovascular, Respiratory
·Nucleotide-like				
·Adenosine	4	Vascular, Bronchus	Multiple Effects	Cardiovascular, Respiratory
·Purinocceptors	4	Vascular, Platelets	Relaxes Muscle	Cardiovascular, Respiratory
·Cannabis	2	Brain	Sensory Perception	Analgesics, Memory
·Platelet activating factor	1	Most Peripheral Tissues	Inflammation	Anti-inflammatory, Anti-asthmatic

•Class II Secretin like	•Gonadotropin-releasing hormone like	1	Reproductive Organs, Pituitary	Thyroid Regulation	Prostate Cancer, Endometriosis
	•Gonadotropin-releasing hormone	1	Pituitary, Brain	Thyroid Regulation	Metabolic Regulation
	•Thyrotropin-releasing hormone	1	Gastrointestinal	Neuroendocrine	Oncology, Alzheimer's
	•Growth hormone- inhibiting factor	1	Brain, Eye, Pituitary	Neuroendocrine	Regulation of Circadian Cycle
	•Melatonin				
	•Secretin	1	Gastrointestinal, Heart	Digestion	Obesity, Gastrointestinal
	•Calcitonin	1	Bone, Brain	Calcium Resorption	Osteoporosis
	•Corticotropin releasing factor/urocortin	1	Adrenal, Vascular, Brain	Neuroendocrine	Stress, Mood, Obesity
	•Gastric inhibitory peptide (GIP)	1	Adrenals, Fat Cells	Sugar/Fat Metabolism	Diabetes, Obesity
	•Glucagon	1	Liver, Fat Cells, Heart	Gluconeogenesis	Cardiovascular
•Class III	•Glucagon-like Peptide 1 (GLP-1)	1	Pancreas, Stomach, Lung	Gluconeogenesis	Cardiovascular, Diabetes, Obesity
	•Growth hormone-releasing hormone		Brain	Neuroendocrine	Growth Regulation
	•Parathyroid hormone	1	Bone, Kidney	Calcium Regulation	Osteoporosis
	•PACAP	1	Brain, Pancreas, Adrenals	Metabolism	Metabolic Regulation
	•Vasoactive intestinal polypeptide (VIP)	1	Gastrointestinal	Motility	Gastrointestinal
	•Metabotropic Glutamate	7	Brain	Sensory Perception	Hearing, Vision
	•GABA _B	1	Brain	Neurotransmitter	Mood Disorders
	•Extracellular Calcium Sensing	1	Parathyroid, Kidney, GI Tract	Calcium Regulation	Cataracts, GI Tumors

Fig. 11B**G protein-coupled receptors:**

(Division into Class A

Or Class B)

1. **A1 adenosine receptor** [Homo sapiens]. ACCESSION AAB25533
npivyaf riqkfrvtfl kiwndhfrq pappidedlp eerpdd
Class A
2. **adrenergic, alpha -1B-, receptor** [Homo sapiens]. ACCESSION NP_000670
npiiypcsskefkrafvrilgcqcrgrrrrrrrllggcaytyrptwtrggslersqsrkdslddsgsclsgsqrtpaspspgylgr
gappvelcafpewkapgallspapeppgrgrhdsplftfklktepespgtdggasnggceaaadvangqpgfksnmpla
pgqf
Class A
3. **adrenergic receptor alpha-2A** [Homo sapiens]. ACCESSION AAG00447
npviytifnhdfrfakkkilcrgdrkriv
Class A
4. **alpha-2B-adrenergic receptor - human**. ACCESSION A37223
npviytifnqdfrafrilcrpwtqtaw
Class A
5. **alpha-2C-adrenergic receptor - human**. ACCESSION A31237
npviytfvfnqdfpsfkhilfrrrrgfrq
Class A
6. **beta-1-adrenergic receptor** [Homo sapiens]. ACCESSION NP_000675
npiiycrspdfrikafqglccarraarrhathgdrprasgclargpppspgaasdddddvvgatpparilepwagcnggaa
adsd ssldepcrpgfaseskv
Class A
7. **beta-2 adrenergic receptor**. ACCESSION P07550
npliciyspdrfriaqellclrrsslkayngyssngntgeqsyhveqekenllcedlpgtedfvghqgtvpsdnidsqgrncs
tndsl
Class A
8. **dopamine receptor D1** [Homo sapiens]. ACCESSION NP_000785
npiiyafnadfrkafstllgcyrilcpatnnaietvsinnngaamfsshheprgsiskecnlvyliphavgssedlkkeeaagiapl
eklspsalvildytdvslekiqpitqngqhpt
Class A
9. **D(2) dopamine receptor**. ACCESSION P14416
npiiyttfniefkafkilh
Class A

10. **d3 dopamine receptor - human.** ACCESSION G01977
npviyttfniefkafkils
Class A
11. **dopamine receptor D4 - human.** ACCESSION DYHUD4
npviytfvnaefrnfkrallacc
Class A
12. **dopamine receptor D5 - human.** ACCESSION DYHUD5
npviyafnadfqkvfaqllgcshfcsrtptvetvnisnelisynqdivfhkeiaaayihmmpnavtpgnrevdndeeegpfdm
fqiyqtspdgdpvaesvwelcdcegisldkitpftpngfh
Class A
13. **muscarinic acetylcholine receptor M1 [Homo sapiens].** ACCESSION NP_000729
nrmcyalcnkafdrtdfrlllcrwdkrrwrkipkrpgsvhrtpsrqc
Class A
14. **muscarinic acetylcholine receptor M2 [Homo sapiens].** ACCESSION NP_000730
npacyalcnatfkktkfhllmchyknigatr
Class A
15. **muscarinic acetylcholine receptor M3 [Homo sapiens].**
nrmcyalcnktrfttkmlllcqcdkkrkqyqqrqsvifhkrapeqal
Class A
16. **muscarinic acetylcholine receptor M4 [Homo sapiens].** ACCESSION NP_000732
npacyalcnatfkktkfhlllcqymnigatr
Class A
17. **m5 muscarinic receptor. locus HUMACHRM** ACCESSION AAA51569
nrmcyalcnrtrfktfkmlllcrwkkkkveeklywqgnsklp
Class A
18. **5-hydroxytryptamine (serotonin) receptor 1A [Homo sapiens].** ACCESSION
BAA90449
npviyayfinkdfqnafkikiickf
Class A
19. **5-hydroxytryptamine (serotonin) receptor 1B [Homo sapiens].** ACCESSION
BAA94455
npiiytmsnedfkqafhklirfkcts
Class A

20. **5-hydroxytryptamine (serotonin) receptor 1E** [Homo sapiens]. **ACCESSION** BAA94458
npllytsfnedfklafkklircr
Class A
21. **OLFACTORY RECEPTOR 6A1**. **ACCESSION** O95222
npiiyclrnqevkralccilhlyqhdpdpkkgsmv
Class A
22. **OLFACTORY RECEPTOR 2C1**. **ACCESSION** O95371
npilytlrnmevkgalrllgkgrevg
Class A
23. **angiotensin receptor 1** [Homo sapiens]. **ACCESSION** NP_033611
nplfygflgkfkryflqllkyippkakshsnlsfkmstlsyrpsdnvssstkkpapcfve
Class B
24. **angiotensin receptor 2** [Homo sapiens]. **ACCESSION** NP_000677
npflycfvgnrffqqlrsvfrvpitwlqgkresmscrkssslremetfvs
Class B
25. **interleukin 8 receptor beta (CXCR2)** [Homo sapiens]. **ACCESSION** NM_001557
NPLIYAFIGQKFRHGLLKILAIHGLISKDSLKPDSRPSFVGSSSGHTSTTL
Class B
26. **cx3c chemokine receptor 1 (cx3cr1)** (fractalkine receptor)
ACCESSION P49238
npliyafagekfrfrylyhlygkclavlcgrsvhvdssesqrsrhgsvlssnftyhtsdgdalll
Class B
27. **neurotensin receptor - human**. **ACCESSION** S29506
n pilynlvsanfrhiflatlacpwwrrrrkrpafsrkadsvssnhflssnatretly
Class B
28. **SUBSTANCE-P RECEPTOR (SPR) (NK-1 RECEPTOR) (NK-1R)**. **ACCESSION** P25103
npiiycclnrfrlglfkhafrccpfisagdyeglemkstrylqtqgsvykvsrletfistvvgahleepdgpkatpssldltsncssrsdskt
mtesfsfssnvl
Class B
29. **vasopressin receptor type 2** [Homo sapiens]. **ACCESSION** AAD16444
npwiyasfsssvsselsllccargrtppslgpqdescftassslakdtss
Class B
30. **thyrotropin-releasing hormone receptor - human**. **ACCESSION** JN0708
npviynlmsqkfraafrklcnckqkptekpanyvalnysvikesdhfstelddivtdtlylsafkvsfddtclasevvsfsqs
Class B

31. **oxytocin receptor - human.** ACCESSION A55493
npwiymlftghlfhelvqrflccsasyllkgrrlgetsaskksnsssfvlshrsssqrcsqpsta
Class B
32. **neuromedin U receptor 1 [Homo sapiens].** ACCESSION AAG24793
npvlyslmssrfretfqealcigacchrlrprhsshslsrmttgstlcdvgsllgswvhplagndgpeaqetdps
Class B
33. **gastrin receptor.** ACCESSION AAC37528
nplvyfcfmhrrfrqacletcarccprpprarpralpdedpptsiaslsrlysttistlgpg
Class B
34. **galanin receptor 3 [Homo sapiens].** ACCESSION 10879541
nplvyalasrhfrarfirlwpcgmrhraralrvrpassgppgcpgdarpsgrllaggqgqpepregpvhggeaargpe
Class A
35. **edg-1 - human.** ACCESSION A35300
npiiyltnkemrrafirimsckcpgdsagkfkprpiiagmefsrsksdnsshpkdegdnpetimssgnvnss
Class A
36. **central cannabinoid receptor [Homo sapiens].** ACCESSION NP_057167
npiiyalrskdlrhafismfpcsgtaqpldnsmgdsdclhkhannaasvhraaescikstvkiakvtnsvstdtsaeal
Class A
37. **delta opioid receptor - human.** ACCESSION I38532
npvlyafldenfkrcfrqlcrkpcgrpdpsfsrpreatarervtactpsdpgpgggraa
Class A
38. **proteinase activated receptor 2 (PAR-2) human.** ACCESSION P55085
dpfvyyfvshdfrdhaknallcrsvrtvkqmqvsltskkhsrksssysssttvktsy
Class B
39. **vasopressive intestinal peptide receptor (VIPR) rat.** ACCESSION NM_012685
NGEVQAELRRKWRRWHLQGVLGWSSKSQHPWGGSNNGATCSTQVSMLTRVSPSA
RRSSSFQAEVSLV
Class B